(during development) variation of the organ in question. Furthermore, arguments are marshalled to prove the male animal is more variable than the female. We may suppose a division of labor has arisen, by which the male germ-cell has acquired the special function of storing up gemmules of this sort. The egg is the conservative hereditary factor in sexual conjugation, and the spermatozoon the progressive one. Facts are offered to show that in reciprocal crossing the male exerts a more variable influence than the female.

Die Bedeutung der sexuellen Fortpflanzung für die Selektionstheorie. WEISMANN. Jena, 1886.

This author objects to this theory on the ground that when animals are out of relation with their environment the special organ which is weak is not directly affected, and may even be in harmony with the other organs, (if one organ varies all must vary,) and hence will not feel any special strain. For example, what special strain can there be on the green of a moth's wing which does not match the color of a forest leaf, and thus exposes the moth to the attack of birds. His other objection, that the paternal character is as often masked by the prepotent maternal, due to the more rapid multiplication of the maternal idioplasm, does not seem to touch the point at issue. Weismann thinks that in asexual reproduction there can be no variation, and that variation ensues by the sexual union of idioplasms of diverse natures. Consider how multiform must be the variety of characters combined in each individual. The combinations for only ten generations amount to 1024. If now, slight variations in various directions ensue among the individuals of a species, when these variations are compounded the result must be, by algebraic summation, the continuous increase of special characters along definite lines in the course of several generations. But we ask, how can this be, except the minute variations are, in the majority of cases, in the right direction? Here is the very pith of the problem. There is also another factor left out of account, and that is the matter of sexual attraction, either between individuals or more especially between sexual pronuclei producing "prepotency." May there not be definite laws relating the structure of the two idioplasms about to be united, in a way most advantageous? Among human offspring the best and most beautiful offspring have been supposed the result of love matches, (Finck).

This opens up the whole question of the effect of the reproductive cells upon the soma, the reverse of the one we have been considering. The amount of nuclear material present is conceived as helping the process of self division, and when from any cause, as from lack of nutrition, the nucleoplasm is small, a stimulus to development is given by any sudden accession, as takes place in sexual conjugation of cells. This method, of occasional advantage to the protozoa, has been preserved with the metazoa, as it proved advantageous for producing variation, the protozoa not needing it for this purpose (?) as their body is directly changed by the environment. A further discussion of the question follows in the next paper, also by Weismann.

Die Continuität des Keimplasmas als Grundlage einer Theorie der Vererbung. WEISMANN. Jena, 1885.

Are we to conceive of ontogenetic development and reproduction as a repeated cycle starting with the egg, which produces an indefinite number of generations of cells called the soma; and then some of their ultimate generations becoming detached as eggs? Not at all. We must conceive, rather, that the germinal cells multiply like the protozoa, are immortal and direct descendants of each other, and that cyclically when reproduction takes place, some of the germinal cells divide on the plan